TETRA TECH

January 10, 2018

Ms. Megan Schuette
On-Scene Coordinator
U.S. Environmental Protection Agency – TLC
8600 NE Underground Drive, Pillar 253
Kansas City, Missouri 64161

Subject: **Removal Site Evaluation Report**
St. Joe Trailer Court Site, Viburnum, Iron County, Missouri
U.S. EPA Region 7 START 4, Contract No. EP-S7-13-06, Task Order No. 0191
Task Monitor: Megan Schuette, On-Scene Coordinator

Dear Ms. Schuette:

Tetra Tech, Inc. is submitting the attached removal site evaluation report regarding the St. Joe Trailer Court site, Viburnum, Iron County, Missouri. If you have any questions or comments, please call the START Project Manager at (417) 257-9977.

Sincerely,

[redacted]
START Project Manager

[redacted]
[redacted] PG, CHMM
START Program Manager

Enclosure

cc: [redacted] START Project Officer (cover letter only)

415 Oak Street, Kansas City, MO 64106
Tel 816.412.1741 Fax 816.410.1748 www.tetratech.com

REMOVAL SITE EVALUATION REPORT
ST. JOE TRAILER COURT SITE
VIBURNUM, IRON COUNTY, MISSOURI
EPA ID MON000703744

Superfund Technical Assessment and Response Team (START) 4
Contract No. EP-S7-13-06, Task Order No. 0191

Prepared For:

U.S. Environmental Protection Agency
Region 7
11201 Renner Boulevard
Lenexa, Kansas 66219

January 10, 2018

Prepared By:

Tetra Tech, Inc.
415 Oak Street
Kansas City, Missouri 64106
(816) 412-1741

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APPENDICES

ATTACHMENTS

TABLES

1.0 INTRODUCTION

The Tetra Tech, Inc. (Tetra Tech) Superfund Technical Assessment and Response Team (START) was tasked by the U.S. Environmental Protection Agency (EPA) Region 7 Superfund Division to conduct a removal site evaluation (RSE) of the St. Joe Trailer Court site (the site). The purpose of the investigation was to evaluate whether any threats to human health or the environment exist in surface soils. A quality assurance project plan (QAPP) for this investigation was submitted to EPA on October 27, 2017 (Tetra Tech 2017).

The RSE included collection and analysis of surface soil samples from gravel driveways and yards surrounding homes at five lots within the St. Joe Trailer Court. This evaluation conformed to the National Oil and Hazardous Pollution Contingency Plan (NCP), 40 *Code of Federal Regulations* (CFR) 300.415(b)(2).

Michelle Handley was the Tetra Tech START Project Manager for RSE activities. Megan Schuette was the EPA Task Order Manager for the project.

2.0 BACKGROUND INFORMATION

Section 2.0 provides information on the site location, description, operational history, and geology, and recounts previous investigations of the site.

2.1 SITE LOCATION AND DESCRIPTION

The site is in Viburnum, Missouri, at the northwest corner of Iron County (see Appendix A, Figure 1). Iron County is within an area known as the Viburnum Trend (part of the New Lead Belt) where mining began in the 1960s. The St. Joe Trailer Court was built by the St. Joseph Lead Company (now The Doe Run Company [Doe Run]) in the 1970s. In 1993, except for 10 lots at the entrance, the property was purchased by a private individual. Each of the 10 lots at the entrance (five lots on either side of the entrance road) is owned by an individual property owner. The trailer court consists of 42 lots total, including the 10 individually owned lots at the entrance.

The site is in the vicinity of the Viburnum Trend Haul Roads site. The site is also adjacent to a tailings pile. Figure 1 in Appendix A depicts the general aerial and topographic layout of the site. Figure 2 in Appendix A shows areas sampled during this investigation.

2.2 SITE GEOLOGY

Missouri is part of the North American craton, a tectonically stable area throughout most recent geologic time. However, the area has undergone some deformation, as shown by faults and by upwarps and downwarps on the surface of the crystalline Precambrian rocks that underlie Paleozoic and younger sedimentary rocks (U.S. Geological Survey [USGS] 1997).

The uppermost bedrock in the area includes the Gasconade Dolomite, which consists of coarsely crystalline cherty dolomite with a basal quartzose sandstone that is host to barite deposits. Beneath the Gasconade Dolomite lies the Eminence Formation, which consists of massive bedded dolomite with some chert blocks, boulders, nodules, as well as some quartz druse. Beneath the Eminence Formation lies the Potosi Dolomite, which consists of massive bedded dolomite with abundant quartz druse (USGS 2017).

2.3 PREVIOUS INVESTIGATIONS

In April 1999, the Missouri Department of Health and Senior Services (DHSS) discovered that a child living at Lo[redacted] at the St. Joe Trailer Court had an elevated blood lead level. DHSS then investigated the property and found high levels of lead in the gravel driveway. Doe Run was notified and responded in

December 1999 by removing the gravel from the driveways of Lots #1 and #6 through #40; however, this removal occurred without DHSS oversight. In the meantime, the site was referred to the Missouri Department of Natural Resources (MDNR) Site Assessment Unit for further investigation. In January 2000, MDNR conducted additional sampling and found elevated levels of lead at Lots #9, #11, #20, #33, and #35. MDNR recommended entry of the site into the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS), but deferred action pending Doe Run cooperation through the Superfund Cooperative Program (to which Doe Run had agreed).

During a period in 2000, Doe Run resampled the five lots and found discrepancies with results from MDNR sampling. In April 2000, Doe Run conducted a soil and gravel removal at Lot #43, and in April 2001, conducted a soil removal at Lot #1. Neither removal occurred under MDNR oversight.

Due to lack of communication and coordination, and a change of personnel on the project, it is believed that no action has occurred at the site since the removals in 2000 and 2001 (EPA 2017).

3.0 SOIL SAMPLING SUMMARY

Sampling for this RSE occurred on November 7, 2017. Tetra Tech START collected surface soil samples from gravel driveways and yards at Lots #9, #11, #20, #33, and #35 to facilitate evaluation of appropriate response actions. Site activities were documented in a field logbook (see Appendix B). Property screening forms are in Appendix C. The following text discusses sampling.

Surface soil samples were collected from driveways and yards at Lots #9, #11, #20, #33, and #35 (see Appendix A, Figure 2). After EPA received access permission from the property owner, START divided each lot into cells encompassing a gravel driveway area and a yard area. While the maximum size of a cell was 100 by 100 feet, actual size of each cell was determined in the field based on site features. The gravel driveway at Lot #20 consisted of two areas with different gravel in each, so the driveway was divided into two separate driveway cells. Scaled Property Screening Forms were used to sketch each property and document cells/areas for screening/sampling. By use of a stainless steel garden trowel, a composite sample consisting of nine aliquots was collected in each cell, each aliquot collected at a different location in the cell within 0 to 2 inches below ground surface (bgs) (to get below the root zone); all nine aliquots were placed in the same labeled, sealed plastic bag to represent that cell.

All soil samples were transported to a sample preparation facility where each sample was transferred to a clean, dedicated paper tray. Because moisture content of a soil sample can adversely affect accuracy of readings for lead from an x-ray fluorescence (XRF) spectrometer, the samples were allowed to completely air dry. Once dried, the samples were homogenized and passed through a number 10 sieve (2-millimeter). START analyzed samples for lead by use of a field-portable XRF spectrometer. Three separate XRF readings from each sample were taken, and the average of these three readings was calculated and recorded. One of the analyzed samples, SJTC09-C1, was submitted for laboratory confirmation analysis for total lead, arsenic, and chromium. For quality control (QC) purposes, one field duplicate sample, SJTC09-C1, was submitted to the EPA Region 7 laboratory.

4.0 ANALYTICAL DATA SUMMARY

This section summarizes analytical data from the soil samples collected during the RSE. Results are further summarized on Figure 3 in Appendix A.

For the RSE, Tetra Tech START collected surface soil samples from driveways and yards at Lots #9, #11, #20, #33, and #35 for analysis for metals contamination (primarily lead) in soil. All of the yard samples contained lead concentrations below the EPA Region 7 screening goal of 400 parts per million (ppm). The driveway samples from Lots #9 and #11 also contained lead below 400 ppm. One driveway sample from Lot #20 contained lead at 2,296 ppm, and the other driveway sample from Lot #20 contained lead at 276 ppm. The driveway samples from Lots #33 and #35 contained lead at 487 and 602 ppm, respectively.

Soil sample SJTC09-C1 was split and sent to the EPA Region 7 laboratory as a duplicate sample pair. Lead results were 325 ppm and 356 ppm for the sample pair. Arsenic results were 8.8 ppm and 8.4 ppm for the sample pair. Chromium results were 10.2 ppm and 9.9 ppm for the sample pair.

Lead results from all soil samples are listed in Table 1. Results appear from samples processed with a number 10 sieve and then analyzed by use of an XRF spectrometer. Results also appear from samples selected for transport to the EPA Region 7 laboratory for confirmation analysis. Laboratory results from those samples derived from analyses for metals in soil via inductively coupled plasma – atomic emission spectrometry (ICP-AES).

TABLE 1

LEAD IN SOIL SAMPLES
ST. JOE TRAILER COURT SITE, VIBURNUM, IRON COUNTY, MISSOURI
NOVEMBER 7, 2017

Property ID	Cell	XRF Result	Lab Result
SJTC09	C1	313	NA
	DW	255	NA
SJTC11	C1	274	NA
	DW	53	NA
SJTC20	C1	344	325 / 356 (FD)
	DW1	276	NA
	DW2	**2,296**	NA
SJTC33	C1	116	NA
	DW	**487**	NA
SJTC35	C1	181	NA
	DW	**602**	NA

Notes:

All sample results are in parts per million (ppm).

XRF value represents average reading for lead after the sample was processed.
Shaded value exceeds the 400 ppm screening level for lead.

C1 Yard sample
DW Driveway sample
FD Field Duplicate
NA Not analyzed
XRF X ray fluorescence spectrometer

5.0 DEVIATIONS FROM THE QUALITY ASSURANCE PROJECT PLAN

To ensure credibility of sample collection, preparation procedures, and analytical data, quality assurance (QA)/QC sampling for the project proceeded according to protocols approved by EPA Region 7 for work at hazardous waste sites, in accordance with the QAPP submitted to EPA on October 27, 2017.

Samples were collected, prepared, and analyzed in accordance with the QAPP, with the following exception:

> Due to color variation of driveway material at Lot #20, the driveway was split into two cells for collection of two separate driveway samples, DW1 and DW2.

6.0 SUMMARY

For the RSE, Tetra Tech START collected surface soil samples from driveways and yards at Lots #9, #11, #20, #33, and #35 for analysis for metals contamination (primarily lead) in soil.

All of the yard samples contained lead concentrations below the EPA Region 7 screening goal of 400 ppm. The driveway samples from Lots #9 and #11 also contained lead below 400 ppm. One driveway sample from Lot #20 contained lead at 2,296 ppm, and the other driveway sample from Lot #20 contained lead at 276 ppm. The driveway samples from Lots #33 and #35 contained lead at 487 and 602 ppm, respectively. Soil sample SJTC09-C1 was split and sent to the EPA Region 7 laboratory as a duplicate sample pair. Lead results were 325 ppm for the normal sample and 356 ppm for the sample pair. Arsenic results were 8.8 ppm and 8.4 ppm for the sample pair. Chromium results were 10.2 ppm for the normal sample and 9.9 ppm for the sample pair.

All samples were collected in accordance with the approved QAPP, except as noted in Section 5.0.

7.0 REFERENCES

Tetra Tech, Inc. (Tetra Tech). 2017. Quality Assurance Project Plan (QAPP) for a Removal Site Evaluation of the St. Joe Trailer Court Site. October 27.

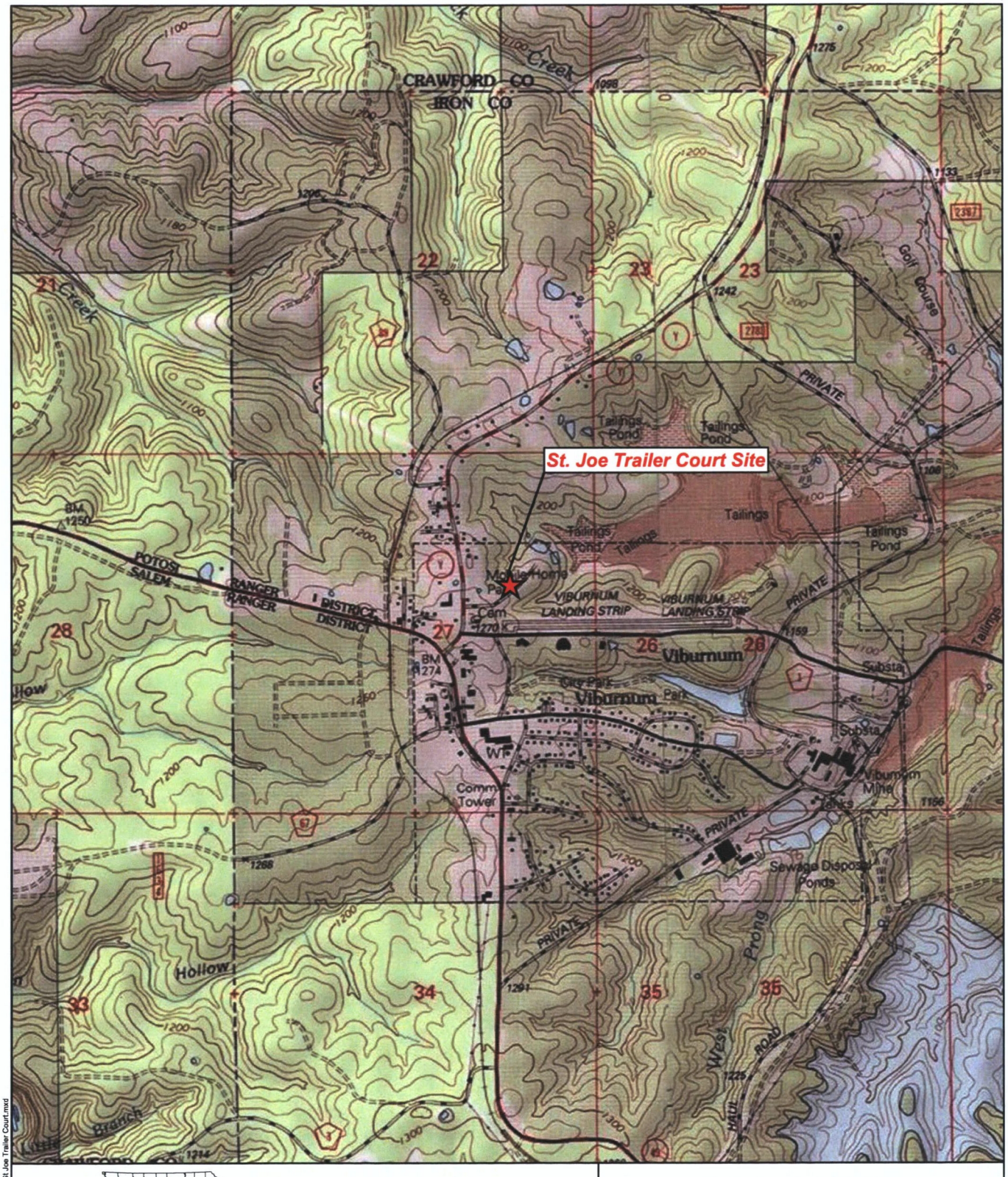
U.S. Geological Survey (USGS). 1997. Groundwater Atlas of the United States: Kansas, Missouri, and Nebraska. Accessed March 9, 2016. http://capp.water.usgs.gov/gwa/gwa.html

USGS. 2017. Mineral Resources On-line Spatial Data. Official Series Descriptions. Accessed January 2, 2018. https://mrdata.usgs.gov/general/map.html

U.S. Environmental Protection Agency (EPA). 2017. EPA Task Order Statement of Work, START 4 Contract #: EP-S7-13-06. July 10.

APPENDIX A

FIGURES



Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed

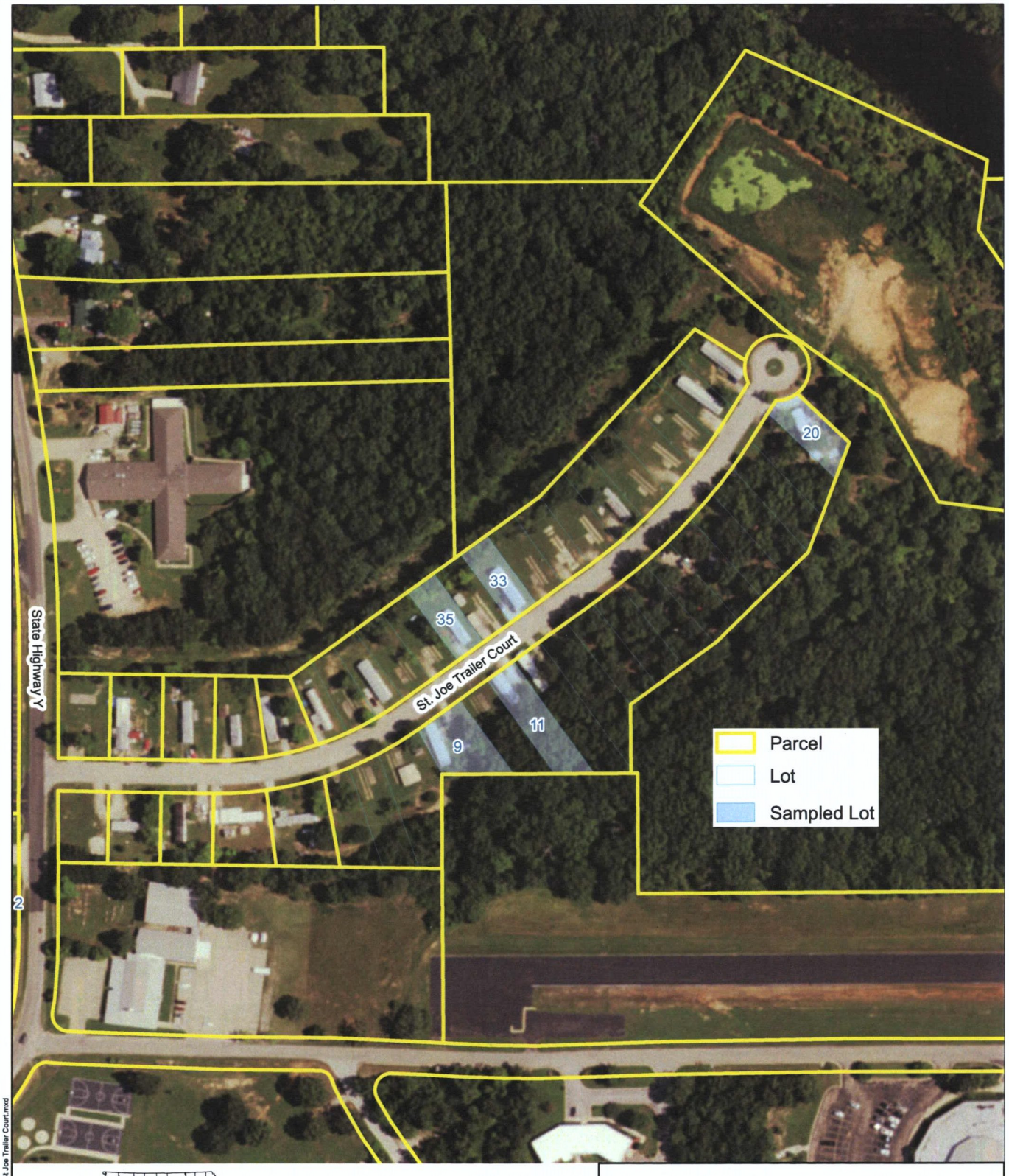
St. Joe Trailer Court Site
Viburnum, Missouri

Figure 1
Site Location Map

TETRA TECH

Date: 8/9/17 Drawn By: [redacted]

C:\START WORK\St. Joseph Trailer Court\GIS\Figure 1 St Joe Trailer Court.mxd



N

0 100 200

Feet

Source: ESRI World Imagery, 2015

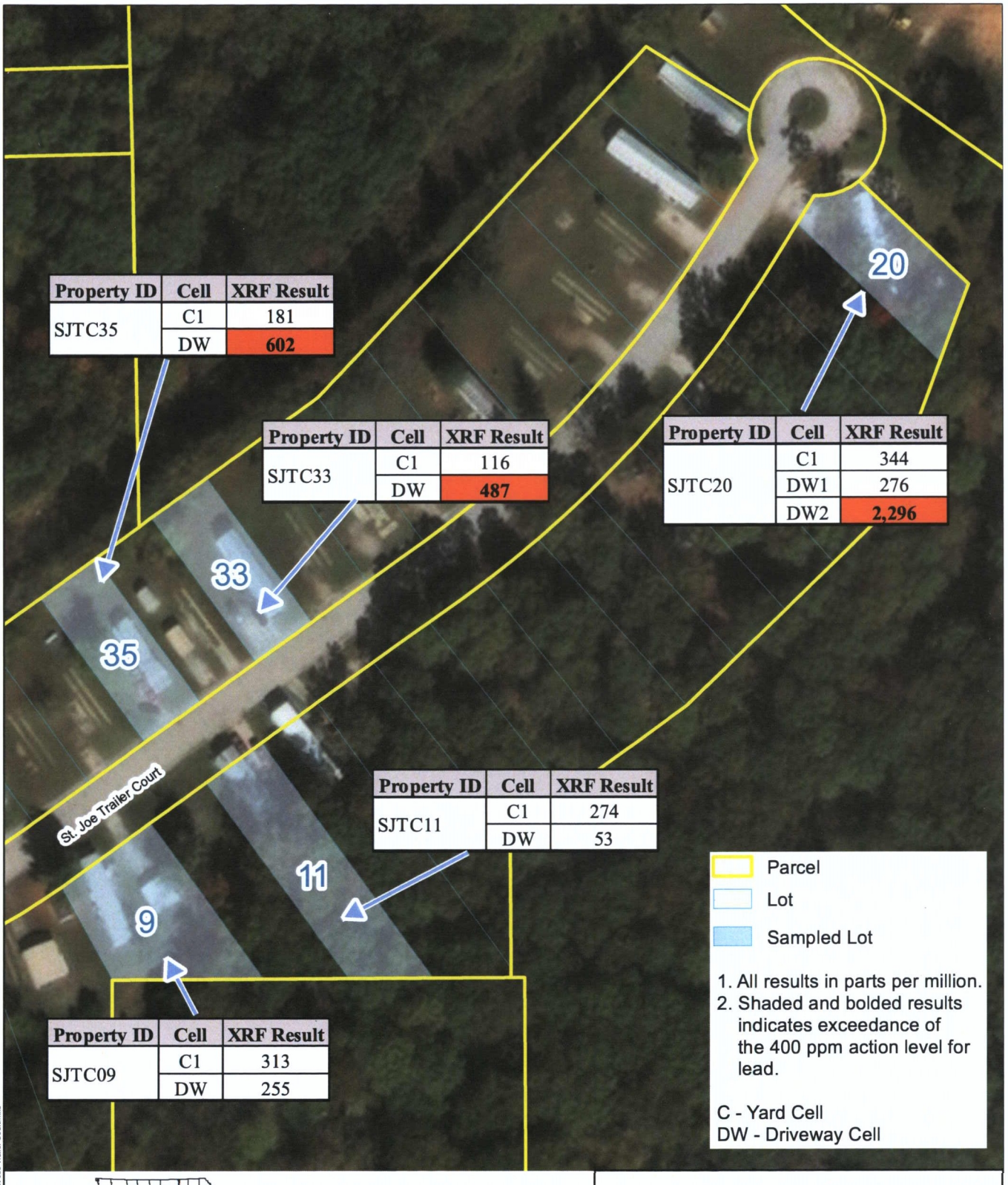
St. Joe Trailer Court Site
Viburnum, Missouri

Figure 2
Site Features Map

TETRA TECH

Date: 8/2/17 Drawn By: [redacted]

C:\START WORK\St. Joseph Trailer Court\GIS\Figure 2 St Joe Trailer Court.mxd



C:\START WORK\St. Joseph Trailer Court\GIS\Figure 3 St. Joe Trailer Court.mxd

St. Joe Trailer Court Site
Viburnum, Missouri

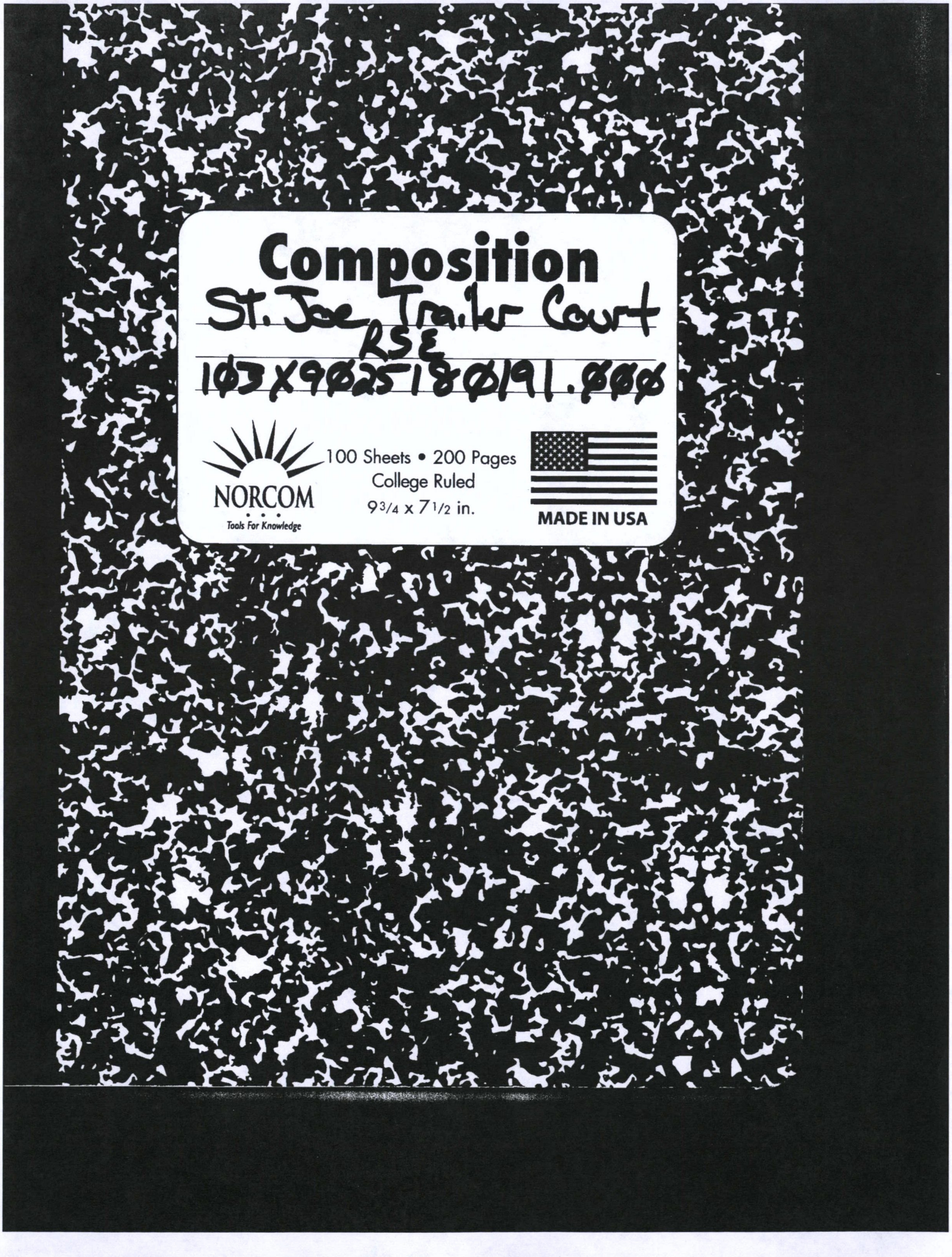
Figure 3
Sample Result Map

TETRA TECH

Date: 8/2/17 Drawn By: [redacted]

APPENDIX B

FIELD LOGBOOK


Composition
St. Joe Trailer Court
RSE
103X9025180191.000
NORCOM
Tools For Knowledge
100 Sheets • 200 Pages
College Ruled
9 3/4 x 7 1/2 in.
MADE IN USA

11-7-17

1145 STM [redacted] arrives at St. Joe Trailer Ct. Drives through to check where properties are.

1200 EPA OSC Schuette arrives. Conduct H&S tailgate and discuss procedure.

1220 Arrive SJTC09. No answer at the door. Already have landlord access agreement. Collect SJTC09 C1 & DW

1230 Arrive SJTC11. Tenant answers & gives access plus resident info. Collect SJTC11 C1 & DW.

1245 Arrive SJTC20. No answer. Collect SJTC20 C1, DW1 (front) & DW2 (back) Front, DW1, is from street to front of steps. Back, DW2, is from front of steps to end of DW. This is because color of driveway soil seemed to have changed (darker in back)

1310 Arrive SJTC33. Tenant answers & gives access plus resident info. Collect SJTC33 C1 & DW.

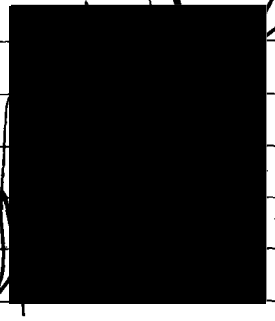
1330 Arrive SJTC35, Tenant answers & gives access. Collect SJTC35 C1 & DW.

1345 Depart St. Joe Trailer Ct. STM [redacted] to Bonne Terre Field office and OSC Schuette to deal w/ other Iron County business.

1-7-17

1430 STM [redacted] arrives at field office to put samples in trays for drying

1530 STM [redacted] depart for day



11-8-17

0800 STM [redacted] + EPA OSC Schutte arrive at field office. STM [redacted], processes dried samples.

0930 Boot XRF #1535 System Check OK Res = 170.9

~~Shoot NIST Hight std. (552±80 for Pb) w/ XRF reading~~

Shoot RCRA Metals Std. (Pb 400-600) XRF reading 405 ±35

0951 SJTC09-C1

reading	
266	668 ±35
267	360 ±26
268	369 ±26
269	466 ±29

10% re-shoot

SJTC09-C1

reading	
270	326 ±24
271	221 ±20
272	248 ±22
273	265 ±22

1000 SJTC09-DW

reading	
274	237 ±21
275	264 ±22
276	264 ±22
277	255 ±21

reshooting C1 again

SJTC09-C1

278	251 ±22
279	306 ±23
280	381 ±26
[redacted]	

use this reading

1011 SJTC11-C1

282	269 ±22
283	257 ±21
284	297 ±23
mean →	274 ±22

SJTC11-DW

285	61 ±12
286	64 ±12
287	35 ±10
288	53 ±11

1/8-17

~~SJTC~~

1035 SJTC20-C1

289 336 ± 24
290 338 ± 25
291 359 ± 25
[redacted] 344 ± 25

SJTC20-DW1 (front)

293 329 ± 25
294 269 ± 23
295 230 ± 21
296 276 ± 23

1043 SJTC20-DW2 (back)

297 2145 ± 64
298 2570 ± 70
299 6523 ± 119
300 3476 ± 84

Re-shoot 1090

SJTC20-DW2

301 2236 ± 65
302 2336 ± 68
303 ~~4296 ± 6~~ 2384 ±
304 2296 ± 67 Use #

1135 SJTC33-C1

305 122 ± 15
306 108 ± 14
307 120 ± 15
[redacted] 116 ± 15

SJTC33-DW

309 454 ± 29
310 590 ± 33
311 416 ± 28
312 487 ± 30

1150 SJTC35-C1

313 189 ± 18
314 165 ± 18
315 189 ± 18
[redacted] 181 ± 18

SJTC35-DW

317 505 ± 29
318 678 ± 34
319 623 ± 32
320 602 ± 32

Use this

1203 SJTC35-DW

Reshoot 1090

321 488 ± 29
322 603 ± 32
323 464 ± 28
324 518 ± 29

APPENDIX C

PROPERTY SCREENING FORMS

MH

Property ID: SJTC09

Owner Name: ~~SJTC09~~

Address: Lot #9

St. Joseph Trailer Court
Screening Form

North Arrow ↓

~~Sample Area Pre Ex XXX~~ ~~Sample Area Post Ex (XXX)~~ NA

	Pre	Post NA
Cell 1:	313	
Cell 2:		
Cell 3:		
Cell 4:		
Cell 5:		

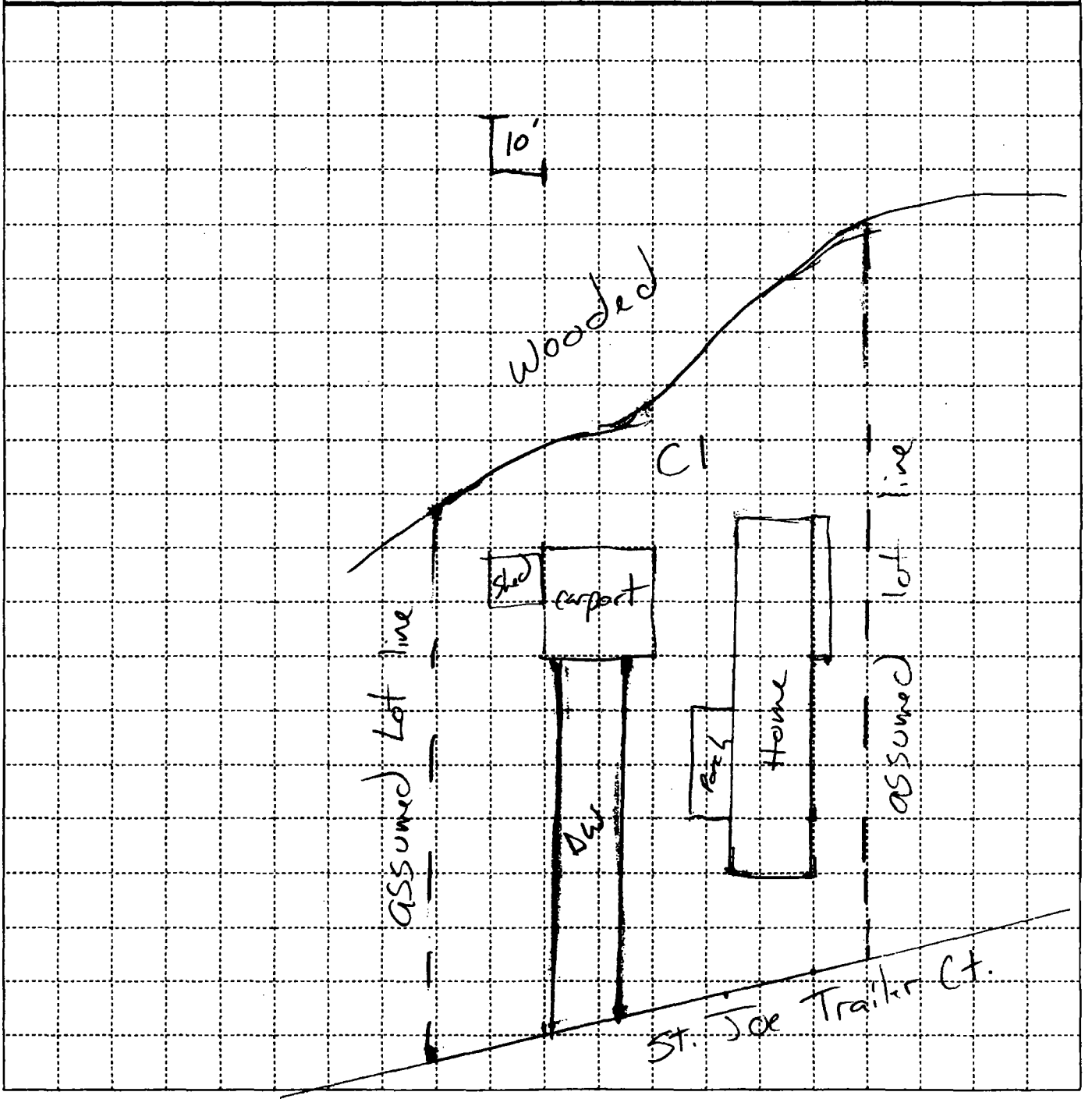
	Pre	Post NA
DW 1:	255	
DW 2:		
Garden:		
Play Area:		
Landscape:		

	Pre	Post NA
Drip Zone:		
Other ( ):		
Other ( ):		

All reading units are milligrams/ kilogram (mg/kg) lead (Pb).

Pre Ex Samples Collected
Initials: MH & MS
Date: 11-7-17
Time: 1220

Pre Ex Samples Analyzed
Initials: MH
Date: 11-8-17
Time: 0951
XRF #: 1535



Property ID: SJTC09 **General Information / Comments**

Owner Information (if different from front)

Telephone No._____ Circle all that apply: tenant owner home work cell

Telephone No._____ Circle all that apply: tenant owner home work cell

Telephone No._____ Circle all that apply: tenant owner home work cell

Property Owner: _____ Mailing Address:_____

City, State:_____ Zip:_____

Physical Description of House or Property (include age of home if known)

white trailer with brown trim

Private Drinking Water Well **Yes** **No** **Unknown**

Notes:

GPS Coordinates:	**Latitude** 37.720163	**Longitude** -91.13348

Total Number of residents:

Number of Children less than 84 months (7 yrs) of age:

Date Access to Screen Granted: _____

Description of historic mining activities or mining material (e.g. tailings, chat, tiff) present on property:

Remediation Information

yd³ removed:	**Tons removed:**
Sod ft²:	**Hydro seed ft²:**

yd³ backfill:	**Gravel:**	**Pea Gravel:**

General Excavation Comments:

Property ID: SJTC 11

Owner Name: _____ **St. Joseph Trailer Court**

Address: Lot #11 **Screening Form**

North Arrow

Sample Area Pre Ex XXX ~~Sample Area Post Ex XXX~~ NA

	Pre	Post
Cell 1:	274	NA
Cell 2:		
Cell 3:		
Cell 4:		
Cell 5:		

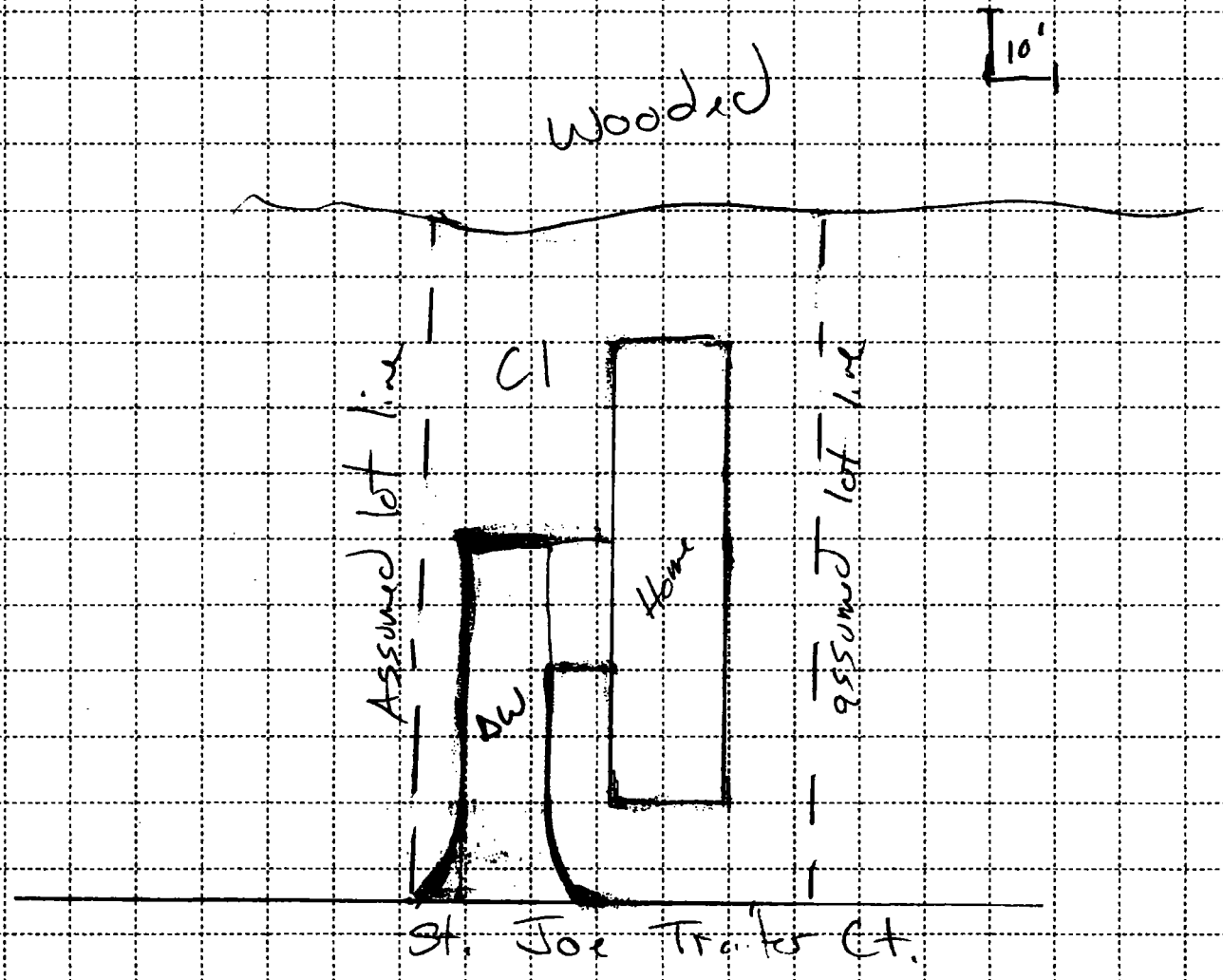
	Pre	Post
DW 1:	53	NA
DW 2:		
Garden:		
Play Area:		
Landscape:		

	Pre	Post
Drip Zone:		NA
Other ( ):		
Other ( ):		

All reading units are milligrams/ kilogram (mg/kg) lead (Pb).

Pre Ex Samples Collected
Initials: MH & MS
Date: 11-7-17
Time: 1230

Pre Ex Samples Analyzed
Initials: MH
Date: 11-8-17
Time: 1011
XRF #: 1535



Property ID: SJTC 11 **General Information / Comments**

Owner Information (if different from front)

Telephone No. 573-247-5851 Circle all that apply: tenant owner home work cell

Telephone No. _____ Circle all that apply: tenant owner home work cell

Telephone No. _____ Circle all that apply: tenant owner home work cell

Property Owner: _____ Mailing Address: _____

City, State: _____ Zip: _____

Physical Description of House or Property (include age of home if known)

Light gray trailer w/ dk grey trim

Private Drinking Water Well **Yes** **No** **Unknown**

Notes:

GPS Coordinates:	**Latitude** 37.720344	**Longitude** -91.132697

Total Number of residents: 4

Number of Children less than 84 months (7 yrs) of age:

Date Access to Screen Granted: _____

Description of historic mining activities or mining material (e.g. tailings, chat, tiff) present on property:

[redacted]

11 St. Joe

play area at NW side near back of trailer

Remediation Information

yd³ removed:	**Tons removed:**
Sod ft²:	**Hydro seed ft²:**

yd³ backfill:	**Gravel:**	**Pea Gravel:**

General Excavation Comments:

Property ID: SJTC20

Owner Name: _____ **St. Joseph Trailer Court**

Address: Lot #20 **Screening Form**

North Arrow ↙

Sample Area Pre Ex XXX

	Pre	Post NA
Cell 1:	344	
Cell 2:		
Cell 3:		
Cell 4:		
Cell 5:		

~~Sample Area Post Ex (XXX)~~ NA

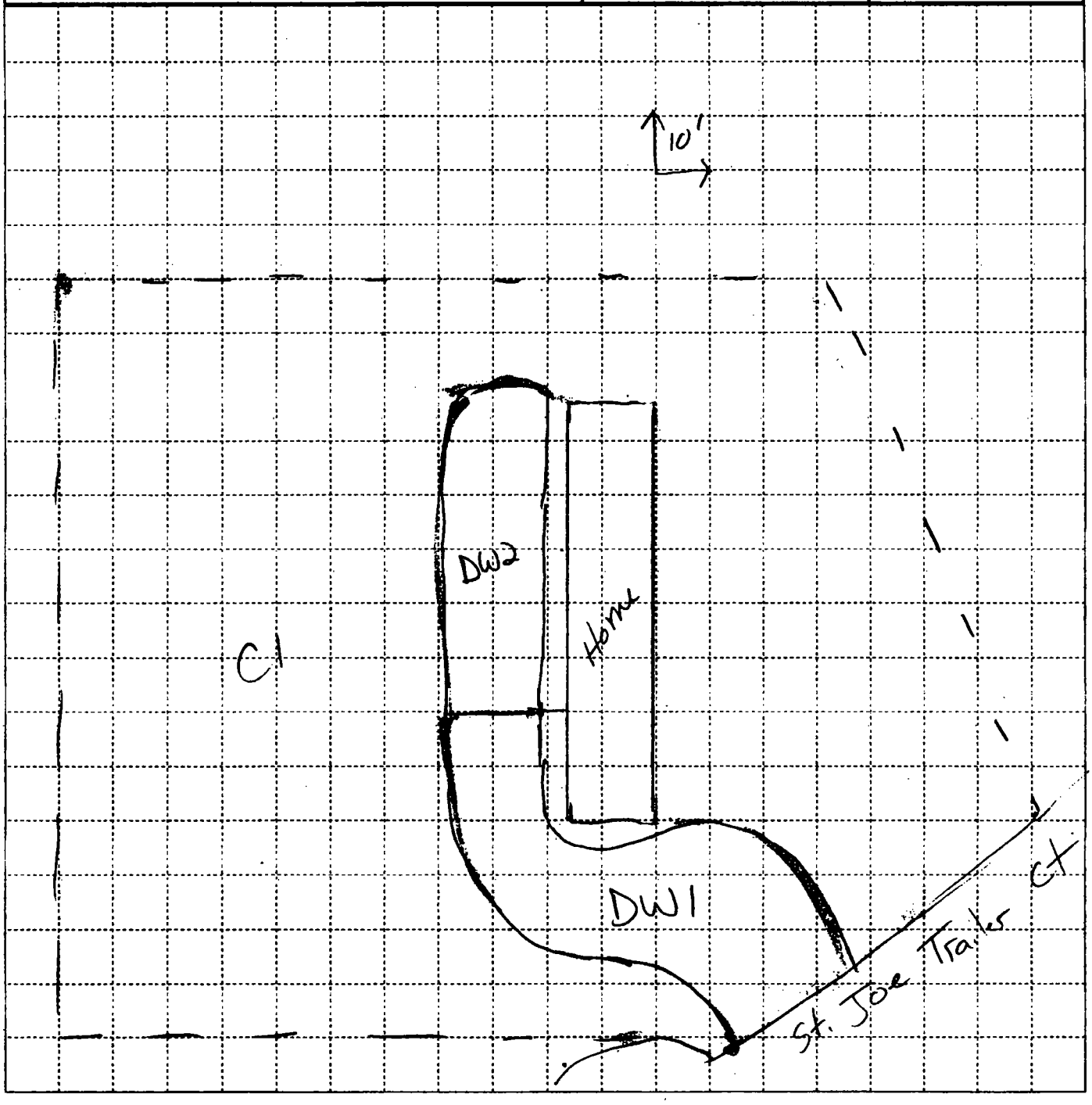
	Pre	Post NA
DW 1:	276	
DW 2:	2296	
Garden:		
Play Area:		
Landscape:		

	Pre	Post NA
Drip Zone:		
Other ( ):		
Other ( ):		

All reading units are milligrams/ kilogram (mg/kg) lead (Pb).

Pre Ex Samples Collected
Initials: MH & MS
Date: 11-7-17
Time: 1245

Pre Ex Samples Analyzed
Initials: MH
Date: 11-8-17
Time: 1035
XRF #: 1535



Property ID: SJTC20 **General Information / Comments**

Owner Information (if different from front)

Telephone No._____ Circle all that apply: tenant owner home work cell

Telephone No._____ Circle all that apply: tenant owner home work cell

Telephone No._____ Circle all that apply: tenant owner home work cell

Property Owner: _____ Mailing Address:_____

City, State:_____ Zip:_____

Physical Description of House or Property (include age of home if known)

Tan trailer w/ white skirt

Private Drinking Water Well **Yes** **No** **Unknown**

Notes:

GPS Coordinates:	**Latitude** 37.721483	**Longitude** -91.131207

Total Number of residents:

Number of Children less than 84 months (7 yrs) of age:

Date Access to Screen Granted: _____

Description of historic mining activities or mining material (e.g. tailings, chat, tiff) present on property:

Remediation Information

yd³ removed:	**Tons removed:**
Sod ft²:	**Hydro seed ft²:**

yd³ backfill:	**Gravel:**	**Pea Gravel:**

General Excavation Comments:

Property ID: SJTC33

Owner Name: _____ **St. Joseph Trailer Court**

Address: Lot #33 **Screening Form**

North Arrow ↗

Sample Area Pre Ex XXX

	Pre	Post NA
Cell 1:	116	
Cell 2:		
Cell 3:		
Cell 4:		
Cell 5:		

~~Sample Area Post Ex (XXX)~~ NA

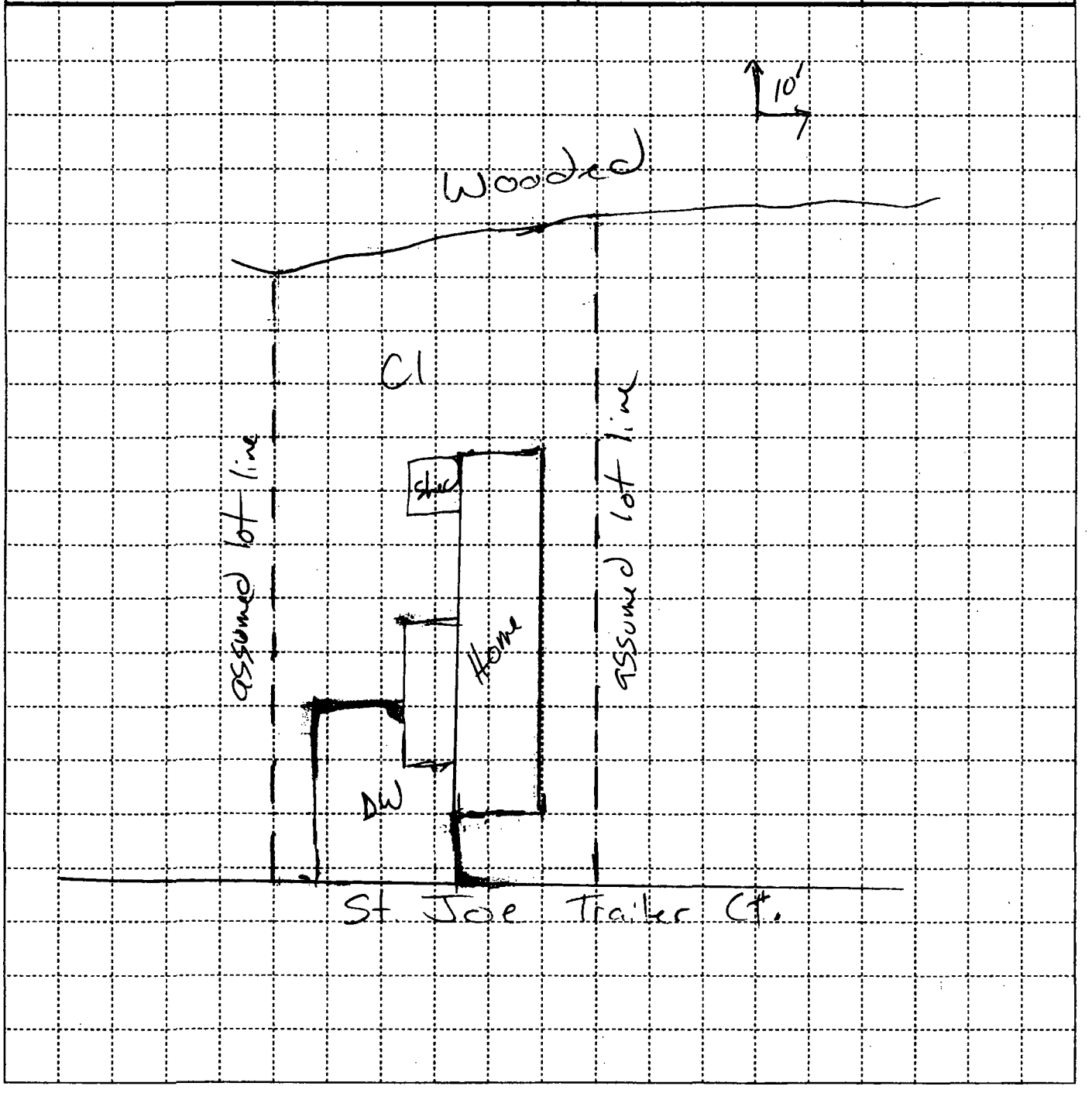
	Pre	Post NA
DW 1:	454	
DW 2:	487	
Garden:		
Play Area:		
Landscape:		

	Pre	Post NA
Drip Zone:		
Other ( ):		
Other ( ):		

All reading units are milligrams/ kilogram (mg/kg) lead (Pb).

Pre Ex Samples Collected
Initials: MH & MS
Date: 11-7-17
Time: 1310

Pre Ex Samples Analyzed
Initials: MH
Date: 11-8-17
Time: 1105
XRF #: 1535



Property ID:	General Information / Comments
SJTC33	

Owner Information (if different from front)

Telephone No. 573-244-5612 Circle all that apply: tenant owner home work cell

Telephone No. _____ Circle all that apply: tenant owner home work cell

Telephone No. _____ Circle all that apply: tenant owner home work cell

Property Owner: _____ Mailing Address: _____

City, State: _____ Zip: _____

Physical Description of House or Property (include age of home if known)

white trailer w/ dark green trim

Private Drinking Water Well Yes No Unknown

Notes:

GPS Coordinates:	Latitude 37.720672	Longitude -91.132717

Total Number of residents: 2

Number of Children less than 84 months (7 yrs) of age:

Date Access to Screen Granted: _____

Description of historic mining activities or mining material (e.g. tailings, chat, tiff) present on property:

grandkids not playing outside

[redacted]

Remediation Information

yd³ removed:	Tons removed:
Sod ft²:	Hydro seed ft²:

yd³ backfill:	Gravel:	Pea Gravel:

General Excavation Comments:

Property ID: SJTC35

Owner Name: _____ **St. Joseph Trailer Court**

Address: Lot #35 **Screening Form**

North Arrow: 91

Sample Area Pre Ex XXX ~~Sample Area Post Ex (XXX)~~ NA

	Pre	Post NA
Cell 1:	181	
Cell 2:		
Cell 3:		
Cell 4:		
Cell 5:		

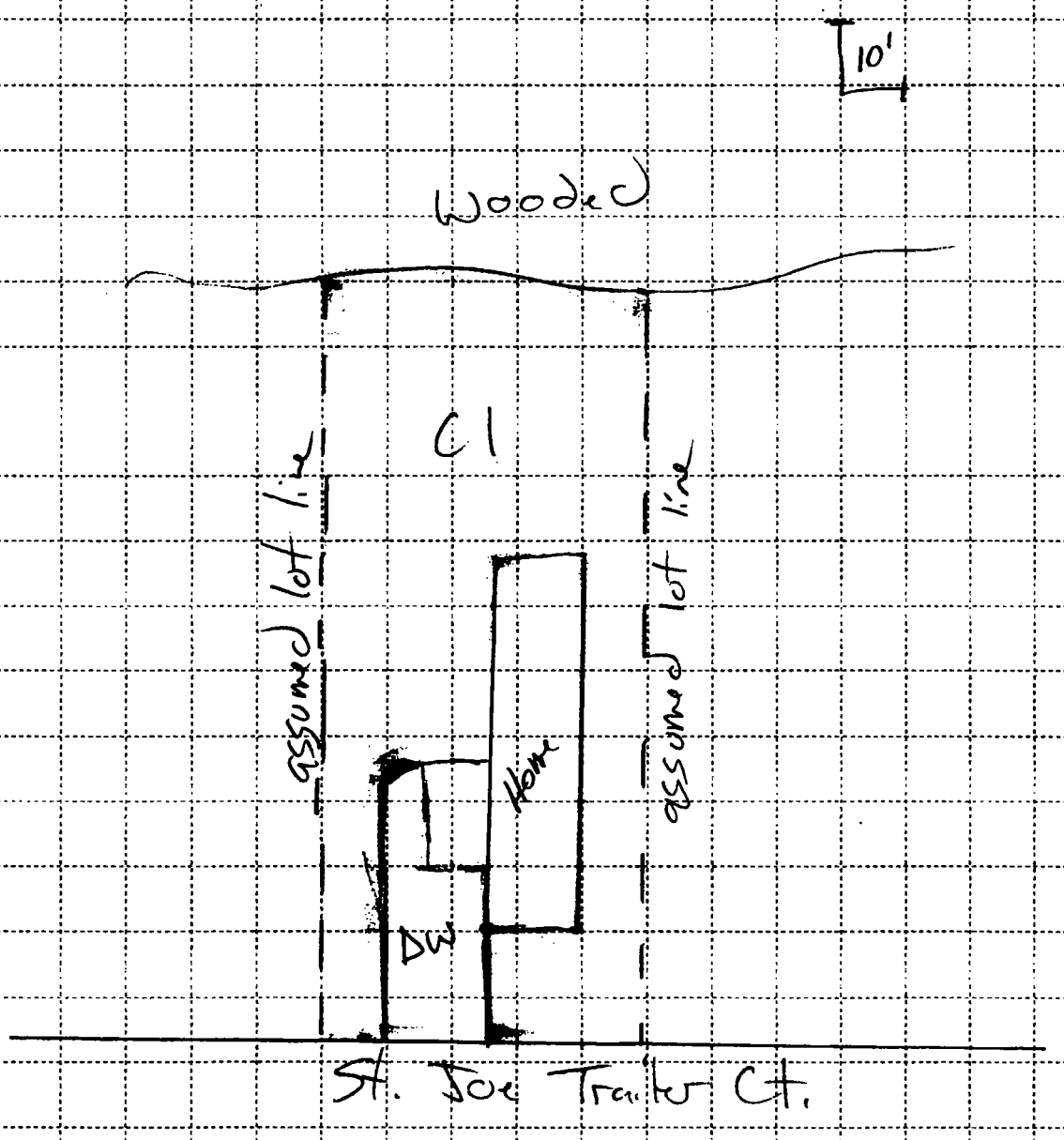
	Pre	Post NA
DW 1:	602	
DW 2:		
Garden:		
Play Area:		
Landscape:		

	Pre	Post NA
Drip Zone:		
Other ( ):		
Other ( ):		

All reading units are milligrams/ kilogram (mg/kg) lead (Pb).

Pre Ex Samples Collected
Initials: MH & MS
Date: 11-7-17
Time: 1330

Pre Ex Samples Analyzed
Initials: MH
Date: 11-8-17
Time: 1150
XRF #: 1535



Property ID: SJTC35 **General Information / Comments**

Owner Information (if different from front)

Telephone No._____ Circle all that apply: tenant owner home work cell

Telephone No._____ Circle all that apply: tenant owner home work cell

Telephone No._____ Circle all that apply: tenant owner home work cell

Property Owner: _____ Mailing Address:_____

City, State:_____ Zip:_____

Physical Description of House or Property (include age of home if known)

white trailer w/ white skirt

Private Drinking Water Well **Yes** **No** **Unknown**

Notes:

GPS Coordinates:	**Latitude** 37.720545	**Longitude** -91.133005

Total Number of residents:

Number of Children less than 84 months (7 yrs) of age:

Date Access to Screen Granted: _____

Description of historic mining activities or mining material (e.g. tailings, chat, tiff) present on property:

Remediation Information

yd³ removed:	**Tons removed:**
Sod ft²:	**Hydro seed ft²:**

yd³ backfill:	**Gravel:**	**Pea Gravel:**

General Excavation Comments:

ATTACHMENT 1

CHAIN-OF-CUSTODIES, FIELD SHEETS, AND ANALYTICAL DATA PACKAGE

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION VII

EPA PROJECT MANAGER (Print)	SITE OR SAMPLING EVENT	DATE OF SAMPLE COLLECTION(S)	SHEET
Megan Schuette	St Joseph Trailer Court ASR 7509	MONTH 11 DAY 07 YEAR 17	1 of 1

CONTENTS OF SHIPMENT

ASR AND SAMPLE NUMBER	TYPE OF CONTAINERS: 1 L PLASTIC BOTTLE	8oz BOTTLE	BOTTLE	BOTTLE	VOA SET (3 VIALS EA)	SAMPLED MEDIA: WATER	SOLID	HAZ WASTE	AIR	OTHER	RECEIVING LABORATORY REMARKS OTHER INFORMATION (condition of samples upon receipt, other sample numbers, etc.)
	NUMBER(S) OF CONTAINERS PER SAMPLE NUMBER										
7509-1		1					X				
7509-1FD		1					X				Field Duplicate
ASR Complete											

DESCRIPTION OF SHIPMENT

2 CONTAINER(S) CONSISTING OF _____ CRATE(S)

1 ICE CHEST(S): OTHER _____

MODE OF SHIPMENT

X COMMERCIAL CARRIER Fed Ex

_____ SAMPLER CONVEYED

7707 3540 4234
(SHIPPING AIRBILL NUMBER)

PERSONNEL CUSTODY RECORD

RELINQUISHED BY (PM/SAMPLER)	DATE	TIME	RECEIVED BY	DATE	TIME	REASON FOR CHANGE OF CUSTODY
[redacted] SEALED UNSEALED	11/7/17	1500	SEALED UNSEALED			
RELINQUISHED BY (PM/SAMPLER) SEALED UNSEALED			RECEIVED BY SEALED UNSEALED			
RELINQUISHED BY (PM/SAMPLER) SEALED UNSEALED			RECEIVED BY SEALED UNSEALED			
RELINQUISHED BY (PM/SAMPLER) SEALED UNSEALED			RECEIVED BY SEALED UNSEALED			

United States Environmental Protection Agency
Region 7
300 Minnesota Avenue
Kansas City, KS 66101

Date: 12/08/2017

Subject: Transmittal of Sample Analysis Results for ASR #: 7509

Project ID: MSB7E7

Project Description: St. Joseph Trailer Court sampling

From: Margaret E.W. St. Germain, Chief
Laboratory Technology & Analysis Branch, Environmental Sciences & Technology Division

To: Megan Schuette
SUPR/AERR/RRSS

Enclosed are the analytical data for the above-referenced Analytical Services Request (ASR) and Project. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. Please complete the Online ASR Sample/Data Disposition and Customer Survey for this ASR as soon as possible. The process of disposing of the samples for this ASR will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Online ASR Sample/Data Disposition and Customer Survey.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295.

Enclosures

cc: Analytical Data File.

Project Manager: Megan Schuette **Org:** SUPR/AERR/RRSS **Phone:** 913-551-7630

Project ID: MSB7E7

Project Desc: St. Joseph Trailer Court sampling

Location: Viburnum **State:** Missouri **Program:** Superfund

Site Name: St. Joseph Trailer Court - Site Evaluation/Disposition **Site ID:** B7E7 **Site OU:** 00

Purpose: Site Cleanup Support **GPRA PRC:** 000DC6

Removal Assessment. Residential soil lead sampling.

PM/Sampler noted on the submitted/emailed ASR dated 8/10/17 that this ASR is not part of a litigation hold activity at this time.

Explanation of Codes, Units and Qualifiers used on this report

Sample QC Codes: QC Codes identify the type of sample for quality control purpose.

__ = Field Sample
FD = Field Duplicate

Units: Specific units in which results are reported.

mg/kg = Milligrams per Kilogram
% = Percent

Data Qualifiers: Specific codes used in conjunction with data values to provide additional information on the quality of reported results, or used to explain the absence of a specific value.

(Blank)= Values have been reviewed and found acceptable for use.

ASR Number: 7509 **Sample Information Summary** **12/08/2017**

Project ID: MSB7E7 **Project Desc:** St. Joseph Trailer Court sampling

Sample No	QC Code	Matrix	Location Description	External Sample No	Start Date	Start Time	End Date	End Time	Receipt Date
1	__	Solid	SJTC20-C1		11/07/2017	12:45			11/14/2017
1	FD	Solid	SJTC20-C1	Field Duplicate	11/07/2017	12:45			11/14/2017

Analysis	Comments About Results For This Analysis

1 Metals in Solids by ICP-AES

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3122.3F

Basis: Dry

Samples: 1-__ 1-FD

Comments:

1 Percent Solid

Lab: Region 7 ESAT Contract Lab (In-House)

Method: EPA Region 7 RLAB Method 3142.9H

Basis: N/A

Samples: 1-__ 1-FD

Comments:
(N/A)

Analysis/ Analyte	Units	1-__	1-FD
1 Metals in Solids by ICP-AES			
Arsenic	mg/kg	8.8	8.4
Chromium	mg/kg	10.2	9.9
Lead	mg/kg	325	356
1 Percent Solid			
Solids, percent	%	93.2	93.1

United States Environmental Protection Agency
Region 7
11201 Renner Blvd
Lenexa, KS 66219

12/08/2017

Results of Sample Analysis

Sample: 7509-1
Project ID: MSB7E7

These are the results from the analysis of solid sample number 7509-1. This sample was collected on 11/07/2017 at the location described as: SJTC20-C1. If you have any questions about these results, contact Megan Schuette at the above address or by calling 913-551-7630. Correspondence should refer to sample number 7509-1 for project: MSB7E7 - St. Joseph Trailer Court sampling.

Analysis/Analyte	Amount Found	Units
Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)		
Arsenic	8.8	Milligrams per Kilogram
Chromium	10.2	Milligrams per Kilogram
Lead	325	Milligrams per Kilogram
Percent Solid		
Solids, percent	93.2	Percent

United States Environmental Protection Agency
Region 7
11201 Renner Blvd
Lenexa, KS 66219

12/08/2017

Results of Sample Analysis

Sample: 7509-1-FD
Project ID: MSB7E7

These are the results from the analysis of solid sample number 7509-1-FD(Also known as: Field Duplicate). This sample was collected on 11/07/2017 at the location described as: SJTC20-C1. If you have any questions about these results, contact Megan Schuette at the above address or by calling 913-551-7630. Correspondence should refer to sample number 7509-1-FD for project: MSB7E7 - St. Joseph Trailer Court sampling.

Analysis/Analyte	Amount Found	Units
Metals in Soil by Inductively Coupled Plasma - Atomic Emission Spectrometry (ICP-AES)		
Arsenic	8.4	Milligrams per Kilogram
Chromium	9.9	Milligrams per Kilogram
Lead	356	Milligrams per Kilogram
Percent Solid		
Solids, percent	93.1	Percent